

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A surface acoustic wave (SAW) filter comprising:
a transducer comprising an acoustic track to pass a SAW, a center frequency of the filter exciting the SAW;
wherein the acoustic track comprises cells along a longitudinal direction of the acoustic track, each cell comprising electrode fingers, the cells comprising different cell types, where a cell type is defined by a connection sequence of electrode fingers in a cell;
wherein at least some of the cells are functional cells, each functional cell for exciting and/or reflecting the SAW;
wherein the functional cells comprise at least one functional cell having a length of a functional cell that corresponds to a phase shift of $2\pi n$ of the SAW where n is an integer;
wherein the functional cells comprise at least two functional cells of a same cell type;
and
wherein the functional cells are configured so that, when the SAW passes through at least two functional cells that have different cell types, the SAW experiences different phase shifts of ϕ and ϕ' .

2. (Currently Amended) A surface acoustic wave (SAW) filter comprising:
a transducer comprising an acoustic track to pass a SAW, ~~a center frequency of the filter exciting the SAW~~ at a center frequency of the filter;
wherein the acoustic track comprises cells along a longitudinal direction of the acoustic track, each cell comprising electrode fingers, the cells comprising different cell types, where a cell type is defined by a connection sequence of electrode fingers of a cell;
wherein at least some of the cells are functional cells, each functional cell for exciting and/or reflecting the SAW;
wherein the functional cells comprise at least two functional cells, each of the at least two functional cells comprising at least one wide electrode finger and at least one narrow electrode finger, where a wide electrode finger is an electrode finger having a width that is greater than a width of a narrow electrode finger; [[and]]
wherein a reflective strength of ~~a target functional cell~~ at least one of the functional cells is configurable by changing a width of an electrode finger in the at least one of the functional cells ~~target functional cell~~ but by maintaining an overall width of the at least one of the functional cells ~~target functional cell~~ substantially constant;
wherein the functional cells comprise at least one functional cell having a length that corresponds substantially to a phase shift of $2\pi n$ in the SAW excited at the center frequency,
where n is an integer; and
wherein the functional cells are configured so that, when the SAW passes through at

least two functional cells that have different cell types, the SAW experiences different phase shifts of ϕ and ϕ' .

3. (Canceled)

4. (Previously Presented) The filter of claim 1 wherein the functional cells comprise at least two functional cells having a same cell type and having a same configuration but that are scaled differently in the longitudinal direction.

5. (Previously Presented) The filter of claim 1, wherein the functional cells comprise functional cells having more than one cell type and that are scaled differently.

6. (Previously Presented) The filter of claim 1, wherein the functional cells comprise at least two functional cells having a same cell type that are scaled differently, a difference in scaling of the at least two functional cells being between 0.1% and 20%.

7. (Currently Amended) The filter of claim 1, ~~wherein electrode fingers of a functional cell comprise an electrode finger group, and~~ wherein the functional cells comprise at least two functional cells having a same cell type and having electrode finger groups with configurations that are substantially identical; and

wherein the functional cells comprise first, second, third and fourth functional cells,

and wherein a final electrode finger of the first functional cell and an initial electrode finger of the second functional cell define a distance that is different from a corresponding distance in the third and fourth functional cells, the first and third functional cells having substantially same configurations and the second and fourth functional cells having substantially same configurations.

8. (Previously Presented) The filter of claim 1, wherein at least some of the cells have a length $\lambda/2$ and do not contribute to reflection or excitation of the SAW, where λ is a wavelength.

9. (Previously Presented) The filter of claim 1, wherein the functional cells comprise functional cells having a same cell type and four electrode fingers per functional cell.

10. (Previously Presented) The filter of claim 1, wherein the functional cells comprise functional cells having three electrode fingers, at least one of the three electrode fingers being a wider electrode finger, the wider electrode finger being wider than another of the three electrode fingers, and

wherein a width of the wider electrode finger is about $3\lambda/8$, or wherein the width of the wider electrode finger deviates from $3\lambda/8$ by at most 20%, where λ is a wavelength.

11. (Previously Presented) The filter of claim 1, wherein at least one cell comprises an

electrode finger having a width of about $m\lambda/16$ or having a width that, at most, deviates from $m\lambda/16$ by $\pm 20\%$, where m is an integer, and where λ is a wavelength.

12. (Previously Presented) The filter of claim 1, wherein the acoustic track comprises a first acoustic track, and wherein the transducer further comprises a second acoustic track, the second acoustic track being substantially identical to the first acoustic track; and

wherein the first and second acoustic tracks are parallel and electrically interconnected.

13. (Previously Presented) The filter of claim 2, wherein the functional cells comprise at least two functional cells having a same cell type and having a same configuration but that are scaled differently in the longitudinal direction.

14. (Previously Presented) The filter of claim 2, wherein the functional cells comprise functional cells having more than one cell type and that are scaled differently.

15. (Previously Presented) The filter of claim 2, wherein the functional cells comprise at least two functional cells having a same cell type that are scaled differently, a difference in scaling of the at least two functional cells being between 0.1% and 20%.

16. (Currently Amended) The filter of claim 2, ~~wherein electrode fingers of a functional cell comprise an electrode finger group, and~~ wherein the functional cells comprise

at least two functional cells having a same cell type and having electrode finger groups with configurations that are substantially identical; and

wherein the functional cells comprise first, second, third and fourth functional cells, and wherein a final electrode finger of the first functional cell and an initial electrode finger of the second functional cell define a distance that is different from a corresponding distance in the third and fourth functional cells, the first and third functional cells having substantially same configurations and the second and fourth functional cells having substantially same configurations.

17. (Currently Amended) ~~The filter of claim 2,~~ A surface acoustic wave (SAW) filter comprising:

a transducer comprising an acoustic track to pass a SAW at a center frequency of the filter;

wherein the acoustic track comprises cells along a longitudinal direction of the acoustic track, each cell comprising electrode fingers, the cells comprising different cell types, where a cell type is defined by a connection sequence of electrode fingers of a cell;

wherein at least some of the cells are functional cells, each functional cell for exciting and/or reflecting the SAW;

wherein the functional cells comprise at least two functional cells, each of the at least two functional cells comprising at least one wide electrode finger and at least one narrow electrode finger, where a wide electrode finger is an electrode finger having a width that is

greater than a width of a narrow electrode finger;

wherein a reflective strength of at least one of the functional cells is configurable by
changing a width of an electrode finger in the at least one of the functional cells but by
maintaining an overall width of the at least one of the functional cells substantially constant;
and

wherein at least some of the cells have a length $\lambda/2$ and do not contribute to reflection or excitation of the SAW, where λ is a wavelength.

18. (Previously Presented) The filter of claim 2, wherein the functional cells comprise functional cells having a same cell type and four electrode fingers per functional cell.

19. (Previously Presented) The filter of claim 2, wherein the functional cells comprise functional cells having three electrode fingers, at least one of the three electrode fingers being a wider electrode finger, the wider electrode finger being wider than another of the three electrode fingers, and

wherein a width of the wider electrode finger is about to $3\lambda/8$, or wherein the width of the wider electrode finger deviates from $3\lambda/8$ by at most 20%, where λ is a wavelength.

20. (Previously Presented) The filter of claim 2, wherein at least one cell comprises an electrode finger having a width of about $m\lambda/16$ or having a width that, at most, deviates from $m\lambda/16$ by $\pm 20\%$, where m is an integer, and where λ is a wavelength.

21. (Previously Presented) The filter of claim 2, wherein the acoustic track comprises a first acoustic track, and wherein the transducer further comprises a second acoustic track, the second acoustic track being substantially identical to the first acoustic track; and

wherein the first and second acoustic tracks are parallel and electrically interconnected.